AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently amended) A method for generating a sinusoidal signal, the method comprising:

determining for said sinusoidal signal a desired frequency and a sampling rate, the desired frequency being higher than an upper limit frequency;

determining the n^{th} sample of the first output sample sequence as a linear combination of a coefficient and two previous output samples;

determining the coefficient as a function of a multiple of said sampling rate, wherein the multiple is not equal to one; and

decimating the first output sample sequence by the multiple of the sampling rate so as to generate the sinusoidal signal of the desired frequency at the desired sampling rate~~, if the desired frequency is higher than an upper limit frequency~~.

2. (Original) A method as claimed in claim 1, the method further comprising:

determining the coefficient by means of a discrete frequency index, the value of the frequency index substantially corresponding to the desired frequency.

3. (Original) A method for generating a sinusoidal signal, the method comprising:

determining for the sinusoidal signal a desired frequency and a sampling rate;

determining the n^{th} sample of the first output sample sequence as a linear combination of a coefficient and two previous output samples;

determining the coefficient as a function of a multiple of said sampling rate;

multiplying said first output sample sequence by a fixed-frequency sine wave so as to generate a second output sample sequence; and

decimating the second output sample sequence by the multiple of the sampling rate so as to generate the sinusoidal signal of the desired frequency at the desired sampling rate, if the desired frequency is lower than a lower limit frequency.

4. (Original) A method as claimed in claim 3, the method further comprising:

determining the coefficient by means of a discrete frequency index, the value of the frequency index substantially corresponding to the desired frequency.

5. (Original) A sine-wave oscillator, which is configured to generate a sinusoidal signal of a desired frequency at a sampling rate, when the desired frequency is higher than a predetermined upper limit frequency, and which sine-wave oscillator comprises:

means for determining the n^{th} sample of the first output sample sequence as a linear combination of the coefficient and two previous output samples;

means for determining the relation between the desired frequency and the sampling rate;

means for determining the coefficient as a function of the multiple of said sampling rate; and

means for decimating the first output sample sequence so as to generate the sinusoidal signal of the desired frequency at the desired sampling rate.

6. (Original) A sine-wave oscillator, which is configured to generate a sinusoidal signal of a desired frequency at a sampling rate, when the desired frequency is lower than a predetermined lower limit frequency, and which sine-wave oscillator comprises:

means for determining the n^{th} sample of the first output sample sequence as a linear combination of the coefficient and two previous output samples;

means for determining the relation between the desired frequency and the sampling rate;

means for determining the coefficient as a function of the multiple of said sampling rate;

means for multiplying the first output sample sequence by a fixed-frequency sine wave so as to generate a second output sample sequence; and

means for decimating said second output sample sequence by said multiple of the sampling rate so as to generate the sinusoidal signal at the desired sampling rate.

7. (Original) A sine-wave oscillator, which is configured to generate a sinusoidal signal of a desired frequency at a sampling rate and which sine-wave oscillator comprises:

means for determining the n^{th} sample of the first output sample sequence as a linear combination of the coefficient and two previous output samples; and

a first group of means in response to the desired frequency is higher than a predetermined upper limit frequency, the first group comprising:

means for determining the relation between the desired frequency and the sampling rate;

means for determining the coefficient as a function of the multiple of said sampling rate; and

means for decimating the first output sample sequence by said multiple of the sampling rate so as to generate the sinusoidal signal of the desired frequency at the desired sampling rate;

a second group of means in response to the desired frequency is lower than a predetermined lower limit frequency, the second group comprising:

means for determining the coefficient as a function of the multiple of said sampling rate;

means for multiplying the first output sample sequence by a fixed-frequency sine wave so as to generate a second output sample sequence; and

means for decimating said second output sample sequence by said multiple of the sampling rate so as to generate the sinusoidal signal at the desired sampling rate; and

a third group of means in response to the desired frequency is higher than or equal to a predetermined lower limit frequency or lower than or equal to a predetermined higher limit frequency, the third group comprising:

means for determining the coefficient as a function of said sampling rate so as to generate the sinusoidal signal of the desired frequency at the desired sampling rate.

8. (Currently amended) A software product <u>stored on a computer readable medium including computer-executable instructions</u> for generating a sinusoidal signal of a desired frequency at a sampling rate, which software product comprises:

a program code for determining the n^{th} sample of the first output sample sequence as a linear combination of the coefficient and two previous output samples;

a program code for determining the relation between the desired frequency and the sampling rate; and

a first sub-process in response to the desired frequency being higher than the upper limit frequency, the first sub-process comprising:

a program code for determining the coefficient as a function of the multiple of said sampling rate; and

a program code for decimating the first output sample sequence by said multiple of the sampling rate so as to generate the sinusoidal signal of the desired frequency at the desired sampling rate;

a second sub-process in response to the desired frequency being lower than the lower limit frequency, the second sub-process comprising:

a program code for determining the coefficient as a function of the multiple of said sampling rate;

a program code for multiplying the first output sample sequence by a fixed-frequency sine wave so as to generate a second output sample sequence; and

a program code for decimating said second output sample sequence by said multiple of the sampling rate so as to generate the sinusoidal signal of the desired frequency at the desired sampling rate; and

a third sub-process in response to the desired frequency being higher than or equal to the lower limit frequency or lower than or equal to the upper limit frequency, the third sub-process comprising:

a program code for determining the coefficient as a function of said sampling rate so as to generate the sinusoidal signal of the desired frequency at the desired sampling rate.

9. (New) A sine-wave oscillator configured to generate a sinusoidal signal of a desired frequency at a sampling rate when the desired frequency is higher than a predetermined upper limit frequency, the sine-wave oscillator further configured to:

determine the n^{th} sample of a first output sample sequence as a linear combination of a coefficient and two previous output samples;

determine the relation between the desired frequency and the sampling rate;

determine the coefficient as a function of a multiple of said sampling rate; and

decimate the first output sample sequence so as to generate the sinusoidal signal of the desired frequency at the desired sampling rate.

10. (New) A sine-wave oscillator configured to generate a sinusoidal signal of a desired frequency at a sampling rate when the desired frequency is lower than a predetermined lower limit frequency, the sine-wave oscillator further configured to:

determine the n^{th} sample of a first output sample sequence as a linear combination of a coefficient and two previous output samples;

determine the relation between the desired frequency and the sampling rate;

determine the coefficient as a function of a multiple of said sampling rate;

multiply the first output sample sequence by a fixed-frequency sine wave so as to generate a second output sample sequence; and

decimate said second output sample sequence by said multiple of the sampling rate so as to generate the sinusoidal signal at the desired sampling rate.